

Table A-1. Fault Parameters

Fault Name	Probability of Activity <sup>1</sup>	Rupture Scenario <sup>2</sup>	Segment Name	Length <sup>3</sup>	Width <sup>4</sup>	Dip <sup>5</sup>	Direction of Dip <sup>6</sup>	Sense of Slip <sup>7</sup>	Magnitude <sup>8</sup>	Slip Rate <sup>9</sup>	Notes
San Andreas	1.0	Unsegmented (0.2)	1906	474 ± 25	15 ± 3	90	N/A	SS	8.1 7.9	24 ± 5	Characterization of the SAF based on Working Group on California Earthquake Probabilities (1999). Unsegmented rupture scenario is a repeat of the 1906 M <sub>w</sub> 7.9 San Francisco earthquake.
		Two Segments (0.05)	North Coast	327 ± 11	15 ± 3	90	N/A	SS	7.7 7.6	24 ± 5	
			Peninsula + Santa Cruz Mountains	147 ± 13	15 ± 3	90	N/A	SS	7.5 7.4	17 ± 4	
		Three Segments (0.6)	North Coast	327 ± 11	15 ± 3	90	N/A	SS	7.7 7.6	24 ± 5	
			Peninsula	85 ± 13	15 ± 3	90	N/A	SS	7.3 7.1	17 ± 4	
			Santa Cruz Mountains	62 ± 8	15 ± 3	90	N/A	SS	7.2 7.0	17 ± 4	
		Four Segments (0.1)	North Coast North	137 ± 11	15 ± 3	90	N/A	SS	7.5 7.3	24 ± 5	
			North Coast South	190 ± 11	15 ± 3	90	N/A	SS	7.7 7.5	24 ± 5	
			Peninsula	85 ± 13	15 ± 3	90	N/A	SS	7.3 7.1	17 ± 4	
			Santa Cruz Mountains	62 ± 8	15 ± 3	90	N/A	SS	7.2 7.0	17 ± 4	
		Floating Earthquake (0.05)	N/A	N/A	15 ± 3	90	N/A	SS	6.9	24 ± 5	
San Gregorio	1.0	Unsegmented (0.2)	Northern + Southern San Gregorio	175 ± 13	15 ± 3	90	N/A	SS	7.6 7.5	1 (0.2) 3 (0.4) 7 (0.4) 10 (0.1)	Characterization of SGF based on WGCEP (1999) model.
		Segmented (0.7)	Northern San Gregorio	109 ± 13	15 ± 3	90	N/A	SS	7.4 7.3	7 ± 3	
			Southern San Gregorio	66 ± 10	15 ± 3	90	N/A	SS	7.2 7.0	3 ± 2	
		Floating Earthquake (0.1)	N/A	N/A	15 ± 3	90	N/A	SS	6.9	1 (0.2) 3 (0.4) 7 (0.4) 10 (0.1)	
Hayward – Rodgers Creek	1.0	Dependent (0.2)	Hayward + Rodgers Creek	150 ± 9	15 ± 3	90	N/A	SS	7.6 7.4	9 ± 2	Characterization of Hayward – Rodgers Creek fault based on WGCEP (1999) model.
			North Hayward + Rodgers Creek	98 ± 9	15 ± 3	90	N/A	SS	7.4 7.2	9 ± 2	
			Southern Hayward	52 ± 9	15 ± 3	90	N/A	SS	7.1 6.9	9 ± 2	
		Independent (0.2)	Rodgers Creek	63 ± 9	15 ± 3	90	N/A	SS	7.2 7.0	9 ± 2	
			Hayward	87 ± 9	15 ± 3	90	N/A	SS	7.3 7.2	9 ± 2	

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		Independent – 2 Segment Hayward (0.4)	Rodgers Creek	63 ± 9	15 ± 3	90	N/A	SS	7.2 7.0	9 ± 2	
			North Hayward	35 ± 8	15 ± 3	90	N/A	SS	6.9 6.8	9 ± 2	
			Southern Hayward	52 ± 9	15 ± 3	90	N/A	SS	7.1 6.9	9 ± 2	
		Independent – 3 Segment Hayward (0.1)	Rodgers Creek	63 ± 9	15 ± 3	90	N/A	SS	7.2 7.0	9 ± 2	
			North Hayward	35 ± 8	15 ± 3	90	N/A	SS	6.9 6.8	9 ± 2	
			South Hayward	27	15 ± 3	90	N/A	SS	6.8 6.7	9 ± 2	
			SE Extension	25	15 ± 3	45 ± 15	NE	OR	6.8 6.6	9 ± 2	
		Floating Earthquake (0.1)	N/A	N/A	15 ± 3	90	N/A	SS	6.9	9 ± 2	
Calaveras	1.0	Unsegmented (0.05)	Northern + Central + Southern Calaveras	118 ± 5	15 ± 3	90	N/A	SS	7.5 7.3	4 (0.2) 6 (0.4) 15 (0.3) 20 (0.1)	Characterization of Working Group on California Earthquake Probabilities (1999) modified by recent paleoseismic data of Kelson and Baldwin (2002).
		Two Segments (0.35)	Northern Calaveras	40 ± 5	15 ± 3	90	N/A	SS	7.0 6.9	6 ± 2	
			South + Central Calaveras	78 ± 5	15 ± 3	90	N/A	SS	7.3 7.1	15 ± 5	
		Three Segments (0.45)	Northern Calaveras	40 ± 5	15 ± 3	90	N/A	SS	7.0 6.9	6 ± 2	
			Central Calaveras	59 ± 5	15 ± 3	90	N/A	SS	7.2 7.0	15 ± 5	
			Southern Calaveras	19 ± 5	15 ± 3	90	N/A	SS	6.6 6.5	15 ± 5	
		Segment + Floating Earthquake (0.1)	Northern Calaveras	40 ± 5	15 ± 3	90	N/A	SS	7.0 6.9	6 ± 2	
			Floating Earthquake on Central + South Calaveras	78 ± 5	15 ± 3	90	N/A	SS	6.2	15 ± 5	
		Floating Earthquake (0.05)	N/A	N/A	15 ± 3	90	N/A	SS	6.2	4 (0.2) 6 (0.4) 15 (0.3) 20 (0.1)	
Concord – Green Valley	1.0	Unsegmented (0.3)	Concord + Green Valley	56 ± 4	15 ± 3	90	N/A	SS	7.1 7.0	5 ± 3	Characterization of Working Group on California Earthquake Probabilities (1999) modified by recent paleoseismic data of Baldwin <i>et al.</i> (2001).
		Three Segments (0.1)	Concord	14 ± 4	15 ± 3	90	N/A	SS	6.5 6.4	4 ± 2	
			Southern Green Valley	22 ± 3	15 ± 3	90	N/A	SS	6.7 6.6	5 ± 3	
			Northern Green Valley	20 ± 4	15 ± 3	90	N/A	SS	6.7 6.5	5 ± 3	

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		Two Segments (0.1)	Concord	14 ± 4	15 ± 3	90	N/A	SS	6.5 6.4	4 ± 2	
			Green Valley	42 ± 4	15 ± 3	90	N/A	SS	7.0 6.8	5 ± 3	
		Two Segments (0.3)	Concord + Southern Green Valley	36 ± 4	15 ± 3	90	N/A	SS	6.9 6.8	5 ± 3	
			Northern Green Valley	20 ± 4	15 ± 3	90	N/A	SS	6.7 6.5	5 ± 3	
		Floating Earthquake (0.2)	N/A	N/A	15 ± 3	90	N/A	SS	6.2	5 ± 3	
Cordelia	1.0	Unsegmented (0.9)	Northern + Southern Cordelia	19 ± 2	15 ± 3	90	N/A	SS	6.6 6.5	0.05 (0.4) 0.6 (0.5) 1.0 (0.1)	Characterization based on paleoseismic data of Kieffer <i>et al.</i> (1994).
		Segmented (0.1)	Northern Cordelia	13 ± 2	15 ± 3	90	N/A	SS	6.5 6.4	0.05 (0.4) 0.6 (0.5) 1.0 (0.1)	
			Southern Cordelia	6 ± 2	15 ± 3	90	N/A	SS	6.2 6.0	0.05 (0.4) 0.6 (0.5) 1.0 (0.1)	
Greenville	1.0	Unsegmented (0.1)	Northern + Central + Southern Greenville	73 ± 8	15 ± 3	90	N/A	SS	7.2 7.1	4.1 ± 1.8	Characterization of the Working Group on California Earthquake Probabilities (1999) modified by paleoseismic data from Sawyer and Unruh (2002).
		Three Segments (0.4)	Northern Greenville	20 ± 8	15 ± 3	90	N/A	SS	6.7 6.5	4.1 ± 1.8	
			Central Greenville	20 ± 8	15 ± 3	90	N/A	SS	6.7 6.5	4.1 ± 1.8	
			Southern Greenville	33 ± 8	15 ± 3	90	N/A	SS	6.9 6.7	4.1 ± 1.8	
		Two Segments (0.2)	Northern + Central Greenville	40 ± 8	15 ± 3	90	N/A	SS	7.0 6.8	4.1 ± 1.8	
			Southern Greenville	33 ± 8	15 ± 3	90	N/A	SS	6.9 6.7	4.1 ± 1.8	
		Two Segments (0.2)	Northern Greenville	20 ± 8	15 ± 3	90	N/A	SS	6.7 6.5	4.1 ± 1.8	
			Central + Southern Greenville	53 ± 8	15 ± 3	90	N/A	SS	7.1 6.9	4.1 ± 1.8	
		Floating (0.1)	N/A	N/A	15 ± 3	90	N/A	SS	6.2	4.1 ± 1.8	
Ortigalita	1.0	Unsegmented (0.3)	Northern + Southern Ortigalita	100 ± 5	15 ± 3	90	N/A	SS	7.4 7.2	0.5 (0.15) 1.0 (0.35) 2.0 (0.35) 2.5 (0.15)	Characterization revised from Working Group on California Earthquake Potential (1996) using recent paleoseismic data from Anderson and Piety (2001).
		Segmented (0.35)	Northern Ortigalita	40 ± 5	15 ± 3	90	N/A	SS	7.0 6.8	0.5 (0.15) 1.0 (0.35) 2.0 (0.35) 2.5 (0.15)	
			Southern Ortigalita	60 ± 5	15 ± 3	90	N/A	SS	7.2 7.0	0.2 (0.5) 1.0 (0.5)	

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		Segmented + Floating Earthquake (0.35)	Northern Ortigalita	40 ± 5	15 ± 3	90	N/A	SS	7.0 6.8	0.5 (0.15) 1.0 (0.35) 2.0 (0.35) 2.5 (0.15)	
			Floating Earthquake on Southern Ortigalita	60 ± 5	15 ± 3	90	N/A	SS	6.7 6.5	0.5 (0.15) 1.0 (0.35) 2.0 (0.35) 2.5 (0.15)	
Mt Oso	0.5	Unsegmented (1.0)	Mt. Oso	25 ± 2	15 ± 2	20	NE	R	6.9 6.7	0.5 (0.15) 1.0 (0.2) 2.0 (0.4) 4.0 (0.2) 6.0 (0.05)	Inferred thrust fault occupying the contractional stepover between the Ortigalita and Greenville faults. NE-dipping geometry inferred from the SW-vergence of the Mt. Oso anticline (J. Unruh, Wm. Lettis and Associates, <i>Pers. Comm.</i> , 2002). Rupture geometry based on a Mt. Diablo analogue. Activity based on slip transfer from the northern Ortigalita to the southern Greenville.
West Napa	1.0	Unsegmented (0.5)	Northern + Southern West Napa	25 ± 2	15 ± 3	90	N/A	SS	6.8 6.6	0.5 (0.2) 1.0 (0.5) 2.0 (0.3)	Characterization based on Working Group on California Earthquake Potential (1996) with modifications based on recent data of J. Wesling, Geomatrix, Inc. ( <i>pers. Comm.</i> , 2001).
		Segmented (0.5)	Northern West Napa	15 ± 2	15 ± 3	90	N/A	SS	6.6 6.4	0.5 (0.2) 1.0 (0.5) 2.0 (0.3)	
			Southern West Napa	10 ± 2	15 ± 3	90	N/A	SS	6.4 6.2	0.5 (0.2) 1.0 (0.5) 2.0 (0.3)	
Mount Diablo	1.0	Unsegmented (0.5)	North + South Mount Diablo	25 ± 2	15 ± 2	20	NE	R	6.9 6.7	1.0 (0.3) 3.0 (0.5) 5.0 (0.2)	Characterization based on Unruh and Sawyer (1997).
		Segmented (0.5)	North Diablo	10 ± 2	10 ± 2	20	NE	R	6.2 6.1	1.0 (0.3) 3.0 (0.5) 5.0 (0.2)	
			South Diablo	15 ± 2	15 ± 2	20	NE	R	6.6 6.4	1.0 (0.3) 3.0 (0.5) 5.0 (0.2)	
Los Medanos fold and thrust belt	1.0	Unsegmented (0.2)	Roe Island + Los Medanos	15 ± 5	18 ± 2	30	NE	R	6.6 6.5	0.3 (0.3) 0.5 (0.4) 0.7 (0.3)	Characterization based on Unruh and Hector (1999).
		Segmented (0.8)	Roe Island	5 ± 2	5 ± 2	30	NE	R	5.5 (0.2) 5.75 (0.6) 6.0 (0.2)	0.3 (0.3) 0.5 (0.4) 0.7 (0.3)	
			Los Medanos	10 ± 2	10 ± 2	30	NE	R	5.75 (0.2) 6.0 (0.6) 6.25 (0.2)	0.3 (0.3) 0.5 (0.4) 0.7 (0.3)	
Potrero Hills	1.0	Unsegmented (1.0)	Potrero Hills	9 ± 2	9 ± 2	30 ± 10	SW	R	5.75 (0.3) 6.0 (0.6) 6.25 (0.1)	0.1 (0.2) 0.3 (0.6) 0.6 (0.2)	Characterization based on Unruh and Hector (1999).

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Pittsburgh-Kirby Hills	1.0	Strike-Slip Model (0.6)	PKHF	20 ± 5	20 ± 5	90	N/A	SS	6.6 6.7	0.3 (0.4) 0.5 (0.4) 0.7 (0.2)	Model includes both strike-slip (Unruh and Hector, 1999) and reverse (Weber-Band, 1998) models for fault activity. The former is given greater weight based on the focal mechanisms from contemporary seismicity. Seismogenic depth is significantly greater than elsewhere in the Bay Area.
		Reverse Model (0.4)	PFHF	20 ± 5	28 ± 4	60 ± 15	E	R	6.6 6.7	0.1 (0.2) 0.15 (0.6) 0.5 (0.2)	
Midland	0.7	Unsegmented (0.1)	Midland	60 ± 5	15 ± 5	70	W	R	7.1 7.0	0.1 (0.2) 0.15 (0.6) 0.5 (0.2)	Activity is inferred from displacement of late Tertiary (and possibly early Pleistocene) strata in seismic reflection profiles.
		Floating Earthquake (0.9)	Midland	20 ± 10	15 ± 5	70	W	R	6 (0.3) 6.25 (0.4) 6.5 (0.3)	0.1 (0.2) 0.15 (0.6) 0.5 (0.2)	
CRSB North of Delta	1.0	Multisegment (0.1)	Mysterious Ridge	35 ± 5	13 ± 2	25 ± 5	W	R	6.9 6.7	1.0 (0.7) 3.5 (0.3)	Characterization revised from Working Group on California Earthquake Potential (1996) using data from O’Connell <i>et al.</i> (2001).
			Trout Creek + Gordon Valley	38 ± 5	13 ± 2	25 ± 10	W	R	7.0 6.8	0.5 (0.3) 1.25 (0.6) 2.0 (0.1)	
		Independent (0.9)	Mysterious Ridge	35 ± 5	13 ± 2	25 ± 5	W	R	6.9 6.7	1.0 (0.7) 3.5 (0.3)	
			Trout Creek	20 ± 5	13 ± 2	20 ± 5	W	R	6.7 6.5	0.5 (0.3) 1.25 (0.6) 2.0 (0.1)	
			Gordon Valley	18 ± 5	13 ± 2	30 ± 5	W	R	6.5 6.4	0.5 (0.3) 1.25 (0.6) 2.0 (0.1)	
Wragg Canyon	1.0	Unsegmented (1.0)	Wragg Canyon	17 ± 2	15 ± 3	90	N/A	SS	6.6 6.5	0.1 (0.3) 0.3 (0.4) 0.5 (0.3)	Cryptic strike-slip fault inferred by O’Connell <i>et al.</i> (2001).
CRSB South of Delta	1.0	Unsegmented (0.1)	Tracy + Vernalis	69 ± 5	10 ± 2	15	W	R	7.0 6.9	0.7 (0.3) 1.5 (0.4) 2.3 (0.3)	Segmentation based on Wakabayashi and Smith (1994) as modified by Working Group on California Earthquake Potential (1996). Segment characteristics from Sowers and Ludwig (2000) and Wakabayashi and Smith (1994).
		Segmented (0.9)	Tracy	45 ± 5	10 ± 2	15	W	R	6.8 6.7	0.29 (0.1) 0.42 (0.3) 1.0 (0.2) 1.5 (0.2) 2.3 (0.1)	
			Vernalis	24 ± 5	10 ± 2	15	W	R	6.6 6.5	0.7 (0.3) 1.5 (0.4) 2.3 (0.3)	
Foothill thrust belt	1.0	Floating Earthquake (1.0)	N/A	N/A	N/A		SW	R	6.25 (0.3) 6.5 (0.3) 6.75 (0.3) 7.0 (0.1)	0.2 (0.2) 0.5 (0.6) 0.8 (0.2)	Simplified characterization based on WGCEP (1999). Incorporates Berrocal, Shannon-MonteVista, and Cascade faults.
Sargent	1.0	Entire Rupture (1.0)	Sargent	56 ± 5	15 ± 3	45 ± 15	SW	OR	7.1 6.9	1.5 (0.3) 3.0 (0.4) 4.5 (0.3)	Characterization based on Working Group on California Earthquake Potential (1996).

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East Bay Hills	0.5	Western East Bay Hills (1.0)	Floating Earthquake	N/A	N/A	70 ± 15	N/A	R	5.5 (0.4) 6.0 (0.45) 6.5 (0.15)	0.5 (0.2) 1.0 (0.65) 1.5 (0.15)	Characterization based on fault model of the Thrust Fault Sub-Group of the 1999 Working Group on California Earthquake Probabilities (Unruh, <i>unpublished memo</i> ). The WEBH includes the Miller Canyon fault (Wakabayashi and Sawyer (1998). The NEBH includes the Franklin and Southampton faults; suspected of accommodating slip transfer from the northern Calaveras fault (approx. 3 mm/yr). SEBH incorporates the Mission fault, a blind seismogenic structure that appears to transfer strain between the Calaveras and Hayward faults.
	0.5	Southern East Bay Hills (1.0)	Floating Earthquake	N/A	N/A	45 ± 15	N/A	R	6.25 (0.6) 6.5 (0.4)	0.1 (0.3) 0.3 (0.4) 0.5 (0.2) 1.0 (0.1)	
	1.0	Northern East Bay Hills (1.0)	Floating Earthquake	N/A	N/A	90 ± 20	N/A	R	6.25 (0.3) 6.5 (0.4) 6.75 (0.3)	1.0 (0.6) 2.0 (0.2) 3.0 (0.2)	

<sup>1</sup> Probability of Activity: Holocene or historical activity (1.0); Late Pleistocene or inferred association with historical seismicity (0.7); activity inferred from fault geometry considered likely to move under current tectonic regime (0.5).

<sup>2</sup> Weight assigned according to likelihood of occurrence of rupture scenario.

<sup>3</sup> Rupture length in kilometers. Unless otherwise stated, weights are 0.4 for the best estimate and 0.3 for the upper and lower bound estimates.

<sup>4</sup> Down-dip width of fault rupture. Unless otherwise stated, weights are 0.4 for the best estimate and 0.3 for the upper and lower bound estimates.

<sup>5</sup> Inclination of fault plane, measured from the horizontal. Unless otherwise stated, weights are 0.4 for the best estimate and 0.3 for the upper and lower bound estimates.

<sup>6</sup> Direction of inclination of the fault plane. N/A infers a vertical fault plane.

<sup>7</sup> SS – strike-slip; R – reverse; OR – oblique-reverse.

<sup>8</sup> Unless otherwise stated, magnitude estimates are weighted equally (0.5 each).

<sup>9</sup> Slip rate based on paleoseismic data. Unless otherwise stated, weights are 0.4 for the best estimate and 0.3 for the upper and lower bound estimates.